



METHOD AND APPARATUS FOR LOW COST SIGNATURE TESTING FOR ANALOG AND RF CIRCUITS

5 This application is a continuation-in-part of the inventors' prior application Serial No. 09/575,488, filed May 19, 2000, entitled Method for Testing Circuits, and claims the benefit of the provisional application Serial No. 60/197,749, filed April 18, 2000, entitled ATPG for Prediction of Analog Specifications, and Serial No. 60/203,602, filed May 12, 2000, entitled Test Generation for High Frequency and RF
10 Circuits, each incorporated by reference in their entireties herein.

Background of the Invention

15 The present invention relates to a method and apparatus for low cost signature testing for testing analog and RF circuits. More particularly, the invention relates to such a method and apparatus for use in manufacturing testing, and for use in monitoring the manufacturing process.

20 Analog and RF circuits are characterized by a set of performance parameters that typically vary continuously over a range. These performance parameters result from design as modified by variations in the manufacturing process that occur over time. Because of this variation, it is often necessary to test at least some of the circuits produced by a given manufacturing process to ensure that the performance parameters of the circuits fall within given specification limits.

25 However, traditional testing methods impose an increasing burden in the form of test time as a result of the ever increasing complexity and speeds of analog and RF circuits. For example, straightforward testing employs automated or automatic test equipment ("ATE") to stimulate the circuit under test (CUT) in a manner designed to induce the circuit to provide an output which directly reflects the value of each performance parameter which it is desired to test. The output is used to determine whether the parameter is within specification limits, in which case the CUT is considered "good" or is considered to "pass," or whether the parameter is outside the specification limits, wherein the CUT is considered "bad" or is considered to "fail."